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| 09/943,246 | 08/30/2001 | Duane Q. Huynh | SJO920010065US1 | 8283 |

7590 03/04/2004

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| EXAMINER |
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CHEN, TIANJIE

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| ART UNIT | PAPER NUMBER |
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2652

DATE MAILED: 03/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/943,246

Applicant(s)

HUYNH, DUANE Q.

Examiner

Tianjie Chen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Non-Final Rejection

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-5, 7-9, and 11-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Peterson et al (US 5,999,372)

With regard to claim 1, Peterson et al shows an actuator for a data storage device in Fig. 1, including: an actuator comb (Fig. 2) having a pivot assembly aperture and an actuator arm 116; a leading edge 132 (Fig. 2) on the actuator arm; a trailing edge 132 (Fig. 2) on the actuator arm; and wherein the leading edge and the trailing edge have aerodynamic profiles for reducing a coefficient of air flow drag for the actuator arm (Column 2, lines 33-35).

With regard to claim 7, Peterson et al shows an actuator for a data storage device, including: an actuator comb (Fig. 2) having a pivot assembly aperture (Fig. 2), a suspension tongue 116, an actuator arm 116 there between, and leading and trailing edges 132 on the actuator arm, wherein the leading and trailing edges extend from the pivot assembly aperture to the suspension tongue (the front portion of 116 in Fig. 2); and wherein the leading edge and the trailing edge have aerodynamic profiles with triangular cross-sectional shapes for reducing a coefficient of air flow drag for the actuator arm (Figs. 2 and 6; column 2, lines 33-35).

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With regard to claim 11, Peterson et al shows a hard disk drive in Fig. 1, including: a housing; a spindle motor assembly 104 mounted to the housing and having a central drive hub (Fig. 1); a data storage disk 106 mounted to the spindle motor assembly; a pivot assembly 112 mounted to the housing; an actuator 11 mounted to the pivot assembly for movement relative to the disk, the actuator having a voice coil 114 (Fig. 1), an arm 116 with a suspension 118 mounted thereto, a read/write head 120 on the suspension; a leading edge 132 on the arm; a trailing edge 132 on the arm; and wherein the leading and the trailing edges have aerodynamic profiles for reducing the coefficient of air flow drag for the arm (Figs. 2 and 6; column 2, lines 33-35).

With regard to claims 2, 8, and 12; Peterson et al further shows that the leading and trailing edges 132 are symmetrical.

With regard to claims 3 and 13, Peterson et al further shows that the leading and trailing edges 132 have triangular cross-sectional shapes (Figs. 2 and 6).

With regard to claims 4, 9, and 14; Peterson et al further shows that the leading and trailing edges 132 are tapered at their respective ends (Figs. 2 and 6).

With regard to claims 5 and 15, Peterson et al further shows that each of the leading and trailing edges 132 extends from the pivot assembly aperture to a suspension tongue (Fig. 2, the front portion of 116).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject

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matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6, 10, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson et al in view of Williams et al (US 6,538,853).

With regard to claims 6, 10, and 16; Peterson et al shows an actuator for data storage device, wherein weight reducing apertures are located in an interior of the actuator arm (Fig. 2), but fails to show aperture has an aerodynamic profile for reducing a coefficient of air flow drag, for the actuator arm.

Williams et al shows an actuator arm having weight reducing aperture 59, which has an aerodynamic profile for reducing the coefficient of air flow drag, for the actuator arm (Fig. 4; column 7, lines 14-18).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to reshape the apertures in Peterson et al's device into the shape taught by Williams et al, which has an aerodynamic profile for reducing the coefficient of air flow drag, for the actuator arm. The rationale is as follows: Peterson et al teaches an actuator arm with apertures and the importance for reducing turbulence, i.e. to reduce the coefficient of air flow drag. Williams teaches carefully shaping the aperture can reduce coefficient of airflow drag (Column 7, lines 14-18). One of ordinary skill in the art would have been motivated to reshape the apertures to reduce the coefficient of airflow drag, for the actuator arm.

Conclusion

3. The prior art made of record in PTO-892 Form and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is (703) 305-7499. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chen Françoise 03/02/04
Tianjie Chen
Primary Examiner
Art Unit 2652